State Government

IN THIS ISSUE

The States Face a Water Crisis

IN THE MIDST of America's greatest war, the consequences of a century of mismanaged resources are leading to a crisis in the nation's water supply. Americans have suddenly and painfully become aware that warnings of a past generation of conservationists were not unfounded, that inexhaustible wealth in water is fast becoming a legend from the past rather than a present reality upon which to base future expectations. In wide areas of the Middle West, a falling water table threatens the domestic and industrial water supply, and in the state of Florida decades of heavy drainage have lowered the level of fresh ground water so that a saline infiltration menaces agriculture. Pollution, a long-time national disgrace, has retarded the war effort in a score of ways. The interests of navigation, irrigation, water power, fisheries, recreation, and domestic water supply remain largely unreconciled although, as Theodore Roosevelt declared forty years ago, the various phases of water utilization are "interdependent parts of the same problem."

In no single resource was primitive America richer than in her wealth in waters. Far-reaching seacoasts, vast river systems, great lakes and small, free-flowing springs, and a steady level of ground water provided transportation, water for domestic and industrial uses, abundant sea food and fresh water aquatic life, and untold wealth in the fur-bearers inhabiting the marshes and shores of inland waters. Throughout the greater part of the continent water was superfluous. Drainage was one of the great American public enterprises. But superabundance has now given place to a dearth of water over extended areas. Unforeseen consequences of accepted practices in water control have produced a water crisis which must be promptly met and properly resolved if the future well-being of the American people is to be protected.

A CENTURY OF MISMANAGEMENT

The early misuse of America's water resources resulted not so much from indifference to future need as from a lack of understanding of the interrelatedness of the natural world. Land speculation and the notion that the highest productivity of acres was always obtained from cultivation led to the drainage of marshlands and lakes and to the ditching of small streams and rivers heedless of the productivity of the new farm land created. Rivers were straightened to produce a more rapid run-off in rainy seasons, overlooking increased soil erosion. As cities grew, the pollution of rivers and lakes, of little consequence in the pioneer era, became a serious public problem.

New conditions of living required a new set of values and practices in the use of water. In May, 1908, the water problem, as related particularly to inland navigation and reforestation, was considered by the first Governors' Conference, meeting with President Roosevelt, and was treated at length in the resulting report of the National Conservation Commission.

In a special message to Congress in 1908, Theodore Roosevelt condemned the "shortsighted, vacillating, and futile methods" by which America had for a century mismanaged her river resources. Advocating "a permanent commission authorized to coordinate the work of all the Government departments relating to waterways, and to frame and supervise the execution of a comprehensive plan," he declared that "the time for playing with our waterways is past. The country demands results." But results came slowly or not at all. Among the states a growing appreciation of the need for co-ordinated control of water use was reflected in a series of interstate water compacts, the most impressive of which created the Interstate Commissions on the Delaware and the Potomac River Basins and the Atlantic Coast Marine Fisheries Commission.

OLD METHODS DIE HARD

Nearly forty years after Theodore Roosevelt called for the co-ordination of federal agencies dealing with water control, federal legislation yet follows, in the main, a pattern established a century ago. National policies and state interests in water management still require reconciliation, and on repeated occasions states have felt it necessary to oppose measures in Congress which made insufficient provision for comprehensive, scientific, well-balanced utilization of water resources. The states insisted upon the amendment of the recent Flood Control Act (P.L. 534) to allow them opportunity to consult and co-operate in the formulation of plans which affected the well-being of their citizens. There was and there remains a widespread belief that well-developed, scientific findings and experimental work in land and water management have not been accorded sufficient weight in the planning of water utilization.

PRINCIPLES OF WATER CONTROL

The five articles comprising this issue deal with some of the general principles which are involved in the use and control of the nation's river resources. All of the authors are agreed that river policy inevitably affects the broader area of water policy, and that what is done about our rivers inexorably influences what will become of our lands. The emphasis is not on current controversies over whether seven TVAs should or should not be created. Rather, it is concerned with the basic problems which must be considered in river basin development regardless of the particular form in which the co-ordinated control of our rivers is undertaken. One thing is certain: Ultimately, and in the not too distant future, there must be developed in the United States an integrated, well-conceived water policy in which national, state, and local needs can be reconciled in accordance with sound scientific findings and economic good sense. The pattern of co-ordination may follow Incodel or TVA, it may combine the advantages of both, or there may be various patterns. The sooner a broad co-ordinated water control policy is developed, the less will be the loss to the public interest in water resources—"the time for playing with our waterways is past. The country demands results."

On the Cover

THE editors of STATE GOVERNMENT express their appreciation to the following organizations for permission to use the pictures making up the composite photograph on this month's cover: upper left, *Acme;* upper right, *Inland Waterways Corporation;* middle left, *U. S. Fish and Wildlife Service;* middle right, *Acme;* lower left, *U. S. Fish and Wildlife Service;* lower right, *Wisconsin Conservation Department.*

State Government

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THE conservation of our natural resources and their proper use constitute the fundamental problem which underlies almost every other problem of our National life. We must maintain for our civilization the adequate material basis without which that civilization can not exist. We must show foresight, we must look ahead. As a nation we not only enjoy a wonderful measure of present prosperity but if this prosperity is used aright it is an earnest of future success such as no other nation will have. The reward of foresight for this Nation is great and easily foretold. But there must be the look ahead, there must be a realization of the fact that to waste, to destroy, our natural resources, to skim and exhaust the land instead of using it so as to increase its usefulness, will result in undermining in the days of our children the very prosperity which we ought by right to hand down to them amplified and developed.

THEODORE ROOSEVELT

Seventh Annual Message, December, 3, 1907

The Place of the States in the Field of Watershed Development

By Ellwood J. Turner

Chairman, The Interstate Commission on the Delaware River Basin

No natural resource is more precious, more vital to our existence, than water. Take it away from us, even for a few days, and there would be no life whatever; all things would perish. But vital as it is, too often sight has been lost of its importance. Consequently little consideration has been given to problems concerning its proper utilization and conservation. However, there is now an awakening as to the necessity of putting an end to past malpractices. Conservation of our natural resources now is the order of the day. This is an effort in which all levels of government, all people, must participate.

In the early days of this country, when the states had full control of the development of their rivers and tributary watercourses except for navigational purposes, life and its problems were relatively simple. The economy and prosperity of the nation rested mainly upon agriculture, fishing, lumbering, and mining. Urban life and modern industry as we now know them were nonexistent. It was easy then to satisfy all requirements as to the use and control of waters.

Complexity of Present-Day Water Problems

But things have changed very materially over the years. At first the transition was slow and gradual. Later it went on with startling rapidity. Today, as compared with one hundred years ago, water problems are tremendous in scope, in importance, and in complexity.

Control of destructive floods has become imperative; water requirements for domestic purposes, agriculture, and other beneficial consumptive uses demand greater and ever more dependable sources of supply; industries constantly are needing larger volumes of suitable water for manufacturing; stream pollution and sanitation problems press for solution; water power is being sought more and more; navigation demands safer and more convenient routes and greater channel depths; fish and aquatic life are increasingly valued commercially and by the sportsmen; recreational areas and facilities must be provided to meet future increases in leisure time and improvements in transportation.

The present generation rightly does not care to be told that these were not problems in the past or how they were handled in the good old days. People now are insisting with ever increasing vehemence that all of the many and ofttimes divergent uses of water which are required to meet the needs of modern life must be provided for them. They are not particularly concerned about how this is accomplished. Results are what they are after. Aside from winning the war in which we are now engaged and a lasting peace to follow, no more important task confronts this nation than to devise, adopt, and execute sound procedures and programs under which the job shall be done.

Campaign to Improve Federal-State Relations

Regardless of the methods adopted, the badly out-of-balance relationships which exist between state governments and the federal government in the field of river control and watershed development must first be corrected.

The states gained a lot of ground last year in their campaign to secure such a better balance. After a long, uphill battle lasting from February through the very last days of its 1944 session, Congress finally heeded the request of representatives of water resources agencies of twenty-nine state governments to include provisions in the omnibus federal flood control bill to make the states a partner with the national administration in the determination of flood control policies and programs. Initiating and standing united in this effort were the four Delaware River Basin sovereignties, the six New England states, and seventeen states located in the arid and semiarid region of the West.

To those who have not kept themselves posted as to what has been going on in recent years, it may be difficult to visualize any reason for a controversy between federal and state governments in water control policies. They undoubtedly would ask: "Is there not a clear demarcation as to the authority of the two levels of government in this field? Under the Constitution, didn't the states expressly delegate to the federal government authority over navigation for the promotion of foreign and interstate commerce, and reserve the power and duty over all other water development problems to themselves?"

True it is that the United States Supreme Court, in a decision by Chief Justice Marshall, ruled in this manner in the famous *Gibbons* v. *Ogden* case, decided in 1824. And from that time until 1936, except as to irrigation projects in the states of the arid region of the country, the federal government's jurisdiction in water matters was generally understood to be limited to improvements for navigation.

Development of Federal Flood Control Policies

The first significant change in the picture followed the nationwide disastrous floods of 1936. As the result of public clamor, Congress in that year passed the original flood control act (Public No. 738, 74th Congress). The act declared that flood control was of national concern, and provided procedures by which programs for its abatement were to be developed and carried out *in co-operation with the state and local governments af-*

fected. Following the principles laid down in *Gibbons* v. *Ogden*, the federal government's participation was based upon navigation, reference being made in the act to the benefits which would accrue to that purpose by the alleviation of floods. State and local governments very properly were looked upon as partners in construction of work, and were required to share in the cost of improvements.

But in 1938 Congress quietly passed an amendment which threw out the window the principle of joint federal and state participation. As amended, the law relieved the states of the responsibility of paying any part of the cost of projects and, as should have been expected, deprived them at the same time of any further say in flood control matters. This was the opening wedge in upsetting the balance in relationships which had existed between the two levels of government until then.

New River and Red River Decisions

But things went from bad to worse. The United States Supreme Court decision in the New River case, decided in 1940, followed by the rulings made in the Red River case the following year, completed the cleavage between federal and state governments in river control policies.

The effect of the first decision was to make almost every little creek and watercourse in every state of the union a navigable stream and therefore subject to complete control and jurisdiction by the federal government. All Congress has to do to bring this about is to authorize an improvement making it possible to float a boat in two feet of water. Regardless of the navigability-in-fact status of the stream, such action, according to the decision of the court, would have the effect of automatically converting a little brook into a navigable waterway.

In the New River case the court ruled that flood protection, watershed development, and recovery of the cost of improvements through the utilization of power are all parts of commerce control, regardless of their degree of beneficial effect to navigation. It stated:

> It is for Congress alone to decide whether a particular project by itself or as part of a more comprehensive scheme, will have a beneficial effect on the arteries of interstate commerce as to warrant it.

These events were a long jump from Chief Justice Marshall's decision, which determined that the Commerce Clause of the Constitution only gave the central government control over the navigation on the rivers of the country. Control over navigation, as decided in *Gibbons* v. *Ogden*, to control over every little stream for every purpose having the remotest relation to navigation, as laid down in the New River and Red River cases, measures the extent of the expansion of federal authority in the field of water control.

The states now could be left entirely out of the picture, their wishes completely ignored, the balance in federal-state relationships which existed since the formation of the new republic utterly destroyed if the national administration were so inclined. Any one familiar with legislative "pork barrels" and "log-rolling" will understand that the opportunities in this field would not be overlooked.

That this opportunity was immediately recognized was brought to light when the new omnibus flood control and river and harbors bills were offered to the Congress. In New England, in Pennsylvania, in West Virginia, in the arid region of the West, indeed even in Senate Commerce Committee Chairman Bailey's own state of North Carolina, Congress was being asked to authorize projects about which state and local governments and their people had no advance knowledge or notice. Even when they finally became aware of their inclusion in the bills at the eleventh hour, all sorts of difficulties to prevent a fair opportunity to be heard were put in their way. As it was so aptly expressed by one New Englander: "The die is cast. About all that can be done now is to squawk. It is too late to be helpfully constructive."

The Campaign for Recognition of State Interests

This was the situation which made it necessary for the group of twenty-nine states to band themselves together to protest against such a policy. They could not see any fairness in the attempt of the navigationists to take unto themselves complete jurisdiction over every use of all of the waters of the country.

As a start in their objective to bring things back into a better, more constitutional balance, the protestants decided that their first step should be to secure, if possible, a broad amendment to the flood control and river and harbors bills, which would provide, among other things, the following:

1. A declaration of policy by Congress to recognize and protect states' interests and their rights and responsibilities in the development of rivers and their watersheds, and to limit the authorization and construction of navigation works to those in which a substantial benefit to navigation will be realized.
2. That no project for navigation or flood control shall be authorized by Congress in the future until it has received a report from the Chief of Engineers of the War Department incorporating the results of a survey made co-operatively by the Army Engineers and the responsible agencies of the states affected by that project, and that such report must clearly and fully set forth the views of the states.
3. That the authorization of such projects included in the then pending bills, to which objections are filed by any of the states directly affected within ninety days after passage of the bills, also would be subject to the requirements of item 2.
4. That in the arid and semiarid region of the West, in the case of conflict, the use of water for irrigation shall be satisfied before being made available for navigation.

Although these were referred to as "crazy" proposals by the "navigation-minded" during the early stages of the campaign, all were finally approved and put into operation by the Congress when it passed the flood control bill. The same amendment in the river and harbor bill was agreed to by the legislators, but a final vote was not taken on this program before Congress adjourned because of other factors.

Items 1, 2, and 4 were accepted as written by the group with which Incodel participated. Objective number 3 was accomplished by striking from the bills those projects which were known to be inimical to the affected states. If reviewed, reinvestigations will be carried out in accordance with the newly re-established Congres-

sional policy calling for proper co-operation and consultation with the states affected.

Other inadvisable provisions in the proposed legislation also were deleted at the request of the better-relationships-in-water-conservation-programs group. Of special interest was the section in the flood control bill which would have given the Army Engineers absolute authority in determining how privately owned water supply and water power reservoirs should be operated.

These successful results are the first step in the campaign of the states to reverse the trend leading toward the complete transfer of authority concerning the development of river systems from the states to the national government—a trend which has been going on in recent years.

Much remains to be accomplished, however, before a proper balance in relationships among federal, state, and local governments is completely restored. The states' recent efforts in the attainment of this objective have been productive and significant. It is expected that their future activities will bring similar and equally gratifying results.

Need for Unified Water Policy Programs

Of the several things that were brought out by the movement to restore an improved balance in the activities of the federal and state governments in water control policies, one was made crystal-clear. In the future the development and execution of water problems cannot be done on a disconnected piecemeal basis.

It is now generally agreed that *no program for the wise utilization and conservation of the water resources of river systems can be formulated on the basis of that resource alone.* Management and control of the use of the land, and of the minerals and the products of the soil, are an integral part of the problem. Land, water, and human requirements—all must be considered together.

Secondly, if the job is to be done right, *there must be a single unified plan in which all of the component projects for the utilization and conservation of natural resources and for the betterment of human equities will be properly evaluated, adjusted, and carried out.*

In an interstate watershed, to whom shall the duty of envisaging the problem in its entirety and of devising and supervising the execution of the resultant over-all plan to meet it be entrusted? There seem to be but two answers to the question. The problem either must be delegated to an agency which is under the control of Congress, or to one primarily responsible to the states in which the watershed is located. Which of the two methods is better, both for the short- and long-term pull, poses a problem which deserves careful and serious consideration.

Federal Regional Authorities

The first alternative—control by the national administration—is exemplified by the Tennessee Valley Authority. Much has been written in recent months about the accomplishments which have resulted from this approach. Complimentarily colored, but particularly convincing, is the book *TVA—Democracy on the March,* by the Authority's chairman, David E. Lilienthal.

Without question, TVA has done wonderful things for the Tennessee Valley. But there is nothing amazing about this. Except that its soils had become old and barren as the result of years of careless management, and some of its forests were despoiled for the same reason, the region was relatively undeveloped and a fertile area upon which to build a program when the TVA project was started. With the full faith and credit of the national Treasury behind it, with no obligation to make an accounting to public investors, when a large part of the cost could be charged off to navigation of dubious value, it has been no great task to build the grandiose and awe-inspiring structures which make up this huge and complex project.

It seems apparent that the project has been well managed. Whether it actually can be proved a success from the national point of view, if all pertinent factors are properly taken into account, cannot be stated. Its advocates can make a strong case in its favor. But the findings of others, not "henchmen of the power trust," who have made a thorough study of the project, are startingly in variance.

TVA Type of Organization Not Always Feasible

But even though TVA is a success, it does not follow that the method can be repeated with similar results anywhere and everywhere. For example, in the Delaware River Basin, with its long-established municipal developments and industrial enterprises, the application of the same kind of programs would lead to confusion and chaos.

The Interstate Commission on the Delaware River Basin is not opposed to federal authorities. The commission believes that if the people in a river watershed region want such an agency they should have it. But it strongly feels that there should be no effort on the part of the federal administration to clothe itself with all-encompassing powers in the over-all control of watershed development until the states directly involved have been afforded a fair opportunity to accept and meet their obligations in this field and have failed to meet that challenge. It recognizes that it may not be possible to bring the states amicably together in certain regions because of wide differences in social policies, political philosophies, and other factors. Where that is the case a federal authority is probably desirable.

Validity of Federal Authorities

But even then, provision for federal jurisdiction certainly ought to be accomplished in a manner about which there can be no reasonable doubt concerning its constitutionality. This condition cannot be said to apply to the Tennessee Valley Authority. The question as to whether Congress, in creating that authority, was exercising powers not delegated to it by the Constitution was raised but never settled. In a suit brought by the Tennessee Electric Power Company, decided in 1939, the United States Supreme Court refused to decide the issue. It observed that only the states and local governments could object to the right of Congress to invade fields of action normally reserved to such units and that the governments affected in the Tennessee Valley seemed to support rather than oppose the program.

Although a ruling was avoided, the court's observation in itself is an admission that there are reasonable bases for questioning the validity of Congress' action in creating federal authorities. In a country which is proud of its democracy, which boasts of its grass-roots philosophy, which respects, reveres, and is rightly grateful for its Constitution, that doubt should be clearly dispelled for all time. Though the need for and the benefits of federal authorities in certain regions may be admitted, it does not follow that their establishment should be accomplished by interpretive rulings or short-cut methods which are subject to questioning.

Our founding fathers who framed the Constitution intended that revisions necessary to meet new and changing conditions should be accomplished by constitutional amendments. This applies particularly when it is obvious that they could not possibly foresee the circumstances which necessitate the change and that any other alternative would be a proper subject of debate. Let federal authorities be provided under the terms of a constitutional amendment. Done in that way and at the expressed desire of the people of the region affected, they would constitute an inspiring example of "democracy on the march."

Legislation creating federal authorities under a constitutional amendment should include adequate provision for the protection of the interests of the states and of the people of the region, and for participation in the programs. It also should require that such part of the cost of projects constructed primarily for the benefit of the region and not for the nation as a whole should be borne by the beneficiaries.

Regional Control by Interstate Action

But Incodel is further convinced that the states in most cases can do a better job for and by themselves if banded together co-operatively for the promotion of their common problems and welfare than any federal agency created for the purpose. Being closer to the people, they can see their problems with greater clarity and with a more healthy and intimate interest and understanding. Democracy at the grass roots *starts* at home in the region, not at the national capitol in Washington.

The Incodel Organizational Pattern

New York, New Jersey, Pennsylvania, and Delaware —slowly, perhaps, but surely—are proving this point in dealing with the Delaware River watershed. In creating the Interstate Commission on the Delaware River Basin in 1936, these four states agreed to act in unison and harmony toward the common goal of envisioning that drainage region in its entirety and of devising, adopting, and supervising programs upon which the valley may be developed to serve present and future generations more advantageously.

In contrast to the organizational pattern of TVA, consisting of a three-man board appointed by the President, and similar to the set-up which is being suggested in the present proposals for other federal regional authorities, policy determinations concerning the Delaware River watershed rest with the twenty legislative, executive, and administrative officials who make up the membership of the Interstate Commission on the Delaware River Basin. These five members from each of the four participating states—one a state senator, one a member of the House of Representatives, one a member of the governor's cabinet, one an official of the state planning board, and one a delegate-at-large—are directly responsible to the people of the region. Programs which they develop and sponsor actually—not theoretically or expediently—must incorporate grass-roots policies. Contrary to the federal method, the policies of Incodel cannot be otherwise.

The interstate co-operation and regional approach as exemplified by Incodel has not involved the creation of a superimposed governmental structure; it has not entailed the addition of a new set of governmental officials; it has not supplanted or superseded any existing governmental agency. It fully utilizes the services of federal agencies and those of the states' legislative, executive, and administrative officials. No new fields of activity have been created.

The dangers inherent in centralized planning, ownership, and control have been carefully avoided. There has been no interference with the functions of local self-government. Each state, each municipality is *free* to determine the details of its own programs. Nor have there been any conflicts with the activities of federal agencies operating in the region. Every effort has been made to promote co-operation and to help the projects of these and all other agencies to move forward harmoniously. By taking advantage of the Incodel machinery for co-operation, projects of all governmental units are being shaped and adjusted to key into a well-rounded and practical plan for the entire watershed region.

In the Delaware River Basin, democracy is really on the march. By co-ordinating the efforts and programs of existing agencies of federal, state, and local governments, with the people of the region actively participating, Incodel, while perhaps not spectacularly, certainly is carefully and surely framing and causing to be carried out in a truly democratic way a practical over-all program for the efficient development of the natural and human resources of the Delaware Valley.

Federal Authority or Interstate Co-operation?

Federal authority or interstate co-operation commissions—which method will bring about the most efficient management and development of the natural and human resources of a river watershed? Federal authorities, like totalitarian governments, may bring quicker results. But we who devoutly believe in democratic processes of government are convinced that the use of the interstate co-operation method will keep the planning for and control of our river basins from becoming so concentrated at the national capitol, so distant from the life of ordinary people, as to wither and deaden the average citizen's sense of participation in governmental affairs. "For in this citizen participation lies the vitality of democracy." In determining the vehicle to accomplish our ends, we must not lose sight of the human elements in the promises of national benefits.

Truly the method of interstate co-operation should not be deserted until the need for a federal authority in any basin has been clearly demonstrated.

A New Way—An Old Task*

By David E. Lilienthal

Chairman, Tennessee Valley Authority

A new chapter in American public policy was written when Congress, in May of 1933, passed the law creating the Tennessee Valley Authority. For the first time since the trees fell before the settlers' ax, America set out to command nature, not by defying her, as in that wasteful past, but by understanding and acting upon her first law—the oneness of men and natural resources, the unity that binds together land, streams, forests, minerals, farming, industry, mankind.

This, of course, was not what the creation of TVA meant to most people who read in their newspapers of the action of Congress. For TVA was then ordinarily thought of simply as a "power" project, a venture in public ownership of hydroelectricity. And even today, in spite of its wide range of activities, it is as a "power" project that many people still regard the TVA. Why there has been this limited picture of the scope and purpose of the authority is wholly understandable.

For fifteen years before TVA came into being, Congressional and public debate centered largely on a single potential resource of the Tennessee River, hydroelectric power. For long years there had been determined efforts to dispose of the government dam and power plant at Muscle Shoals in Alabama, built with public funds for World War I, as if it were like any other of the flotsam left over from that war—the trucks and shoes and trench shovels—to be knocked down to the highest bidder. It was simply regarded as a power plant, either to be dealt with as such a plant in the hands of a private operator would be or, if continued under public control, to be limited to the sale of generated power for distribution at a profit by private industry.

How those power facilities were to be used—that was the major question which attracted public discussion down the years. That question was settled by the passage of the act creating TVA. But it was not settled on the narrow issue of "public ownership" of power. The message of President Roosevelt urging approval of the Norris Bill (which became a law with his signature on May 18, 1933) boldly proposed a new and fundamental change in the development of our country's resources. The words of the President's message were not only eloquent; there was in them a creativeness and an insight born of his New York state experience in establishing regional planning as a political reality. That understanding was matured at his Georgia home, in long days of thinking of the problems of the South and its relation to the whole nation.

> It is clear (the message read) that the Muscle Shoals development is but a small part of the potential public usefulness of the entire Tennessee River. Such use, if envisioned in its entirety, transcends mere power development: it enters the wide fields of flood control, soil erosion, afforestation, elimination from agricultural use of marginal lands, and distribution and diversification of industry. In short, this power development of war days leads logically to national planning for a complete river watershed involving many states and the future lives and welfare of millions. It touches and gives life to all forms of human concerns.
>
> The President then suggested
>
> legislation to create a Tennessee Valley Authority—a corporation clothed with the power of government but possessed of the flexibility and initiative of a private enterprise. It should be charged with the broadest duty of planning for the proper use, conservation, and development of the natural resources of the Tennessee River drainage basin and its adjoining territory for the general social and economic welfare of the Nation. This authority should also be clothed with the necessary power to carry these plans into effect. Its duty should be the rehabilitation of the Muscle Shoals development and the co-ordination of it with the wider plan.
>
> Many hard lessons have taught us the human waste that results from lack of planning. Here and there a few wise cities and counties have looked ahead and planned. But our Nation has "just grown." It is time to extend planning to a wider field, in this instance comprehending in one great project many States directly concerned with the basin of one of our greatest rivers.

A New National Policy

The TVA Act was nothing inadvertent or impromptu. It was rather the deliberate and well-considered creation of a new national policy. For the first time in the history of the nation, the resources of a river were not only to be "envisioned in their entirety"; they were to be developed *in that unity with which nature herself regards her resources*—the waters, the land, and the forests together, a "seamless web"—just as Maitland saw "the unity of all history," of which one strand cannot be touched without affecting every other strand for good or ill.

Under this new policy, the opportunity of creating wealth for the people from the resources of this valley was to be faced as a single problem. To integrate the many parts of that problem into a unified whole was to be the responsibility of one agency. The Tennessee Valley's resources were not to be dissected into separate bits that would fit into the jurisdictional pigeonholes into which the instrumentalities of government had by custom become divided. It was not conceded that at the hour of creation the Lord had divided and classified natural resources to conform to the organization chart of the federal government. The particular and limited concerns of private individuals or agencies in the development of this or that resource were disregarded and rejected in favor of the principle of unity. What God had made one, man was to develop as one.

"Envisioned in its entirety," this river, like every river in the world, had many potential assets. It could

*Reprinted by permission from *TVA—Democracy on the March* (Harpers, 1944), by David E. Lilienthal.

yield hydroelectric power for the comfort of the people in their homes, could promote prosperity on their farms and foster the development of industry. But the same river, by the very same dams, if they were wisely designed, could be made to provide a channel for navigation. The river could also be made to provide fun for fisherman and fish for food, pleasure from boating and swimming, a water supply for homes and factories. But the river also presented an account of liabilities. It threatened the welfare of the people by its recurrent floods; pollution from industrial wastes and public sewage diminished its value as a source of water supply and for recreation; its current carried to the sea the soil of the hills and fields to be lost there to men forever.

To a single agency, the TVA, these potentialities of the river for good and evil were entrusted. But the river was to be seen as part of the larger pattern of the region, one asset of the many that in nature are interwoven: the land, the minerals, the waters, the forests—and all of these as one—in their relation to the lives of the valley's people. It was the total benefit to all that was to be the common goal and the new agency's responsibility.

Inadequacy of Past Practice

That is not the way public resource development had heretofore been undertaken in this country. Congress, in creating TVA, broke with the past. No single agency had in this way ever been assigned the unitary task of developing a river so as to release the total benefit from its waters for the people. Not far from where I write are other rivers developed by private interests or public agencies. They will serve to illustrate the contrast. On these rivers it is the common practice, in public projects as well as private, to build a single dam without first having fixed upon a general plan that will ultimately insure the full use of the whole river as a unit. There are dams built for the single purpose of power development. Such individual dams, in order to yield an immediate return in power, impair or destroy the river's full development of power at other sites, for they were not designed or built with the whole river thought of as it is in nature, a unit. These power dams are not built or operated to control floods, and do not provide a continuous navigable channel. The full usefulness of that river is lessened. Similarly, hundreds of millions of dollars in public funds have been expended for the single purpose of navigation on some of our rivers, but most of the dams constructed will not control the rivers' floods or create electric energy. They now stand as massive barriers against the erection of multipurpose structures.

Over a long period of years, scores of millions of dollars have been spent for levees to hold the waters back on the lower reaches of some of our rivers, but at the headwaters there were no reservoir dams that could make local levee protection effective.

Unified Development of Land and Water

And through the long years there has been a continuing disregard of nature's truth: that in any valley of the world, what happens on the *river* is largely determined by what happens on the *land*—by the kind of crops that farmers plant and harvest, by the type of machines they use, by the number of trees they cut down. The full benefits of stream and of soil cannot be realized by the people if the water and the land are not developed in harmony.

If the soil is exposed, unprotected from the rains by cover and by roots, the people will be poor and the river will be muddy, heavy with the best soil of the fields. And, as a consequence, each year the farmers will be forced more and more to use their land in ways that speed up this cycle of ruin, until the cover and then the top soil itself are wholly gone. When that day comes, as in the great reaches of China's sorrowful Yellow River Valley, then the rains run off the land almost as rapidly as water runs from a pavement. Even a moderate rainfall forces the river from its banks, and every downpour brings disastrous floods, destroying crops and homes and bridges and highways, not only where the land is poor, but down the river's length, down in the areas where people are more prosperous, where the soil is still protected and factories have been built at the river's bend. Industries and railroads will be interrupted, farms flooded out, towns and villages destroyed, while heavy silt deposits fill the power reservoirs and stop up the channels of navigation.

It is otherwise where land is covered with sod or trees, and cultivated each season with the purpose of holding the rain where it falls. Such land literally serves as a water reservoir, a part of a system of flood control and river development, quite as directly as dams that stretch from bank to bank to hold the water back. In many locations, after such proper land-use programs have been rather fully developed, the results should make it possible to reduce the magnitude and cost of engineering structures required for water control.

The farmers' new pastures and meadows themselves are reservoirs. If the changed farming practices now in use on many tens of thousands of Tennessee Valley farms were applied to all the agricultural area of our watershed (as I am confident they will be some day), the soil might absorb as much as half the customary twelve-inch surface run-off of rain each year; this storage of water on the farms would equal the capacity of two reservoirs as great as the one behind the Norris Dam, which stands 267 feet above the Clinch River.

This is, of course, nothing new, nothing discovered by the TVA. That a river could offer many benefits and a variety of hazards, that its improvement through engineering structures is inseparable from the development and use of the land of the watershed, has been recognized for many years by scientists and engineers. For over a generation a distinguished line of conservationists had seen this truth and written and spoken of it with great force. And, as a matter of fact, almost any farmer, standing in his barn door while he watches a torrential rain beat upon his land and fill his creek, could see that much. The point is that knowledge of this inseparability of land and streams has only once, here on this river, been carried into our national *action*. On every other watershed we turn our rivers over to engineers of one agency to develop while farm experts of other agencies concern themselves with the land. Thus far, it is only in the valley of the Tennessee that Congress has directed that these resources be dealt with as a whole, not separately.

Natural Principles Need Co-ordinated Control

The principles of unity whereby this valley has gone about the restoration of its land and the multiplication of the land's usefulness are, of course, the same as those that governed turning the river to man's account. The development of soil and its increased productivity are not simply problems of land, of farming, and of agricultural science, any more than the development of a river is only water control, dams, and engineering techniques. The restoration of land fertility, the healing of gullies, the reforestation of hillsides, these are no more ends in themselves than are flood control, navigation, and power. As the river is not separable from the land, so the land is inseparable from the forests and minerals, from the factories and shops, from the people making their living from their resources.

Here, too, the methods this valley has followed to achieve its purposes break sharply with those long prevailing. The methods differ because to think of resources as a unity compels the use of different ways. The idea of unity makes it inescapable that each man's farm must also be seen as one operating unit. The farm, too, is a "seamless web."

To the farmer on his land the problems do not fit into neat cubicles labeled "forestry" or "soil chemistry" or "mechanical engineering," nor to him is soil erosion or holding water on the land separate from the whole business of making a living on the land. And so, in the way TVA goes about its responsibilities, there are no "jurisdictional" lines, no excluding of the chemical engineer, say, because this is a "farm" problem, or of the businessman or the inventor because soil erosion is a "public issue," or of a county or state expert because agriculture is a "national" question. The invention by this valley's technicians of a new kind of machine and the decision of a businessman to produce and market it may be as important in land restoration as check dams in the gullies, if it thereby enables the farmer to make a living by raising soil-conserving crops. The invention here of a quick-freezing machine, a portable thresher, or a furrow seeder, all designed to overcome specific economic obstacles in the farmer's path toward land conservation, we see as just as real factors in land restoration as the terracing of the slopes.

Because they sinned against the unity of nature, because they developed some one resource without regard to its relation to every other resource in the life of man, ancient civilizations have fallen into decay and lie buried in oblivion. Everywhere in the world the trail of unbalanced resource development is marked by poverty, where prosperity seemed assured; by ugliness and desolation, with towns now dying that once were thriving; by land that once supported gracious living now eroded and bare, and over wide areas the chill of death to the ambitions of the enterprising young and to the security of the mature.

Poverty the End of Exploitation

It often takes some time before the balance shows that more is being subtracted from than added to the assets of a region. But there is no escape from the arithmetic. The fall in the "water table," the subsurface level of water, threatens industry's water supply in the Ohio Valley. The forest areas of northern Wisconsin and Michigan are dotted with towns that are dying and people who are stranded and poor. Lumber was "developed" from the wealth of the forests; there was prosperity for a time. But farming and fish and game were destroyed, and eventually the forests. Now in some regions there is next to nothing to support the towns, the highways, and the schools and human beings. Unless the benefit of the people is the purpose, and the principle of the unified development of resources is the method, the harvest in the end is only such bitter fruits as these.

The "played-out" farmlands of the South, now in the process of rebuilding, were "mined" to grow a single crop of cotton: they are one more illustration of the remorseless arithmetic of nature. Here once lovely manor houses stand seedy and deserted because their foundation, the soil, has been exhausted, romantic monuments to a national tragedy of waste. And the great towers of Manhattan and Chicago, the modern business streets of Omaha on the prairies, all rest on the same foundations as the old plantation manor—the land, the waters, the minerals, and the forests. We are all in this together, cities and countryside.

The Modern Hazard

There is no security or safety for us anywhere if nature's resources are exhausted. This day of machines and increasing populations multiplies our jeopardy. For this we must remember: Unless nature's laws of restoration are observed, modern technology can compress a once gradual process of resource exhaustion into the quick cycle of a generation or two.

The effect of large supplies of low-cost electricity upon industrialization illustrates the modern hazard. For electricity is not freed of these dangers simply because it is publicly owned, as some single-track enthusiasts would appear to imply. Electric power from the Tennessee River has had a great deal to do with the very considerable expansion of industry in this valley in the past decade. Indeed, it is a *sine qua non* of heavy industry, whether in India, in China, in Arkansas, or in the Balkans. It was with electricity that the transformation of rural Russia into an industrial and military giant began. It can bring great benefit to the people. But it may bring disaster. For the stimulation of industrial development by large supplies of electricity, unless the principles of unity govern, can hasten the destruction of natural resources and bring closer the day of decline.

Electric power, like the products of other resources, can be used as part of a balanced and unified program of development, and thereby further the permanent well-being of the people. Electricity is the most humane and the most efficient form of energy. It is mobility itself: It can be brought to people; people need not be brought to the source of energy. Electricity symbolizes the multiplication of human energies through science. But benefit, lasting and secure, will result only if the potentialities of power are seen as a whole, utilized not as ends in themselves but to aid in sustaining and restoring resources.

For when a people or a region rely almost exclusively for their living upon the extraction of raw materials—the cutting of lumber, the growing of wheat, the mining

of coal or iron—and depend little upon the processing, by manufacture, of those raw materials, these natural resources are put under a severe drain to support a growing population. The income which comes to a region from cutting trees or growing cotton and bringing them to a point of transportation is only a small fraction of the income, the "value added," when those trees have been processed into paper or the cotton into overalls. If a region depends—as most "colonial" regions are forced to do—almost entirely upon the income from cutting the lumber or growing the cotton, and hardly at all upon making the paper, the textiles, the furniture, or any of the other articles manufactured from the raw resources, then the pressure to "mine" the fertility of the soil, to devastate the forests for lumber, to deplete the oil. fields and coal reserves becomes very great indeed.

That pressure to deplete resources can be lessened by the growth of the industries which electric power encourages. But if the industry is only exploitative, if it does not *sustain* the productivity of the resources upon which all of us depend, industry can exhaust a region and hurt its people's chances of security and happiness. The "how" of industrial development, like the "how" of developing a river or the land or the forests, is the all-important point.

After the war great energies will be released in the development of many parts of the world. Unless a new way of thinking and acting wins support, this period of "development" will duplicate for every continent and every region the stories of modern Ducktown and of ancient Babylon.

Good will is not enough, nor speeches nor noble intentions. There will be those in abundance. There are principles and policies to develop and to observe if people are to benefit and democratic institutions are to flourish. The unity of nature's resources must not be disregarded, or the purpose for which such developments are undertaken will be betrayed as it has been betrayed before: by the way the job is done.

Essentials of Co-ordinated Resources Development

What are the essentials for getting the job done? What are the principles which must underlie a unified development of resources? As I see it, they are three in number:

—a federal autonomous agency, with authority to make its decisions in the region;

—responsibility to deal with resources, as a unified whole, clearly fixed in the regional agency, not divided among several centralized federal agencies;

—a policy, fixed by law, that the federal regional agency work co-operatively with and through local and state agencies.

The entire TVA experiment, as I interpret it, makes it clear that no proposal for regional resource development may be described as a kind of "TVA" unless it embodies these fundamentals, which are clearly written into the TVA Act and have been the very heart and spirit of ten years of transforming that law into action.

The TVA Method

The methods of democratic development represented by the TVA are distinctive, but their roots lie deep in the soil of American tradition and common experience. They are methods that differ from those customarily employed both by private enterprisers and public agencies. Nevertheless the TVA experiment has been carried on under the existing rules of the game of American life. It required no change in the Constitution of the United States. Congress has maintained full control. Property rights and social institutions have undergone no drastic amendment. In short, the valley's change has gone forward under typical and traditional American conditions, rather than under nonexistent "ideal" conditions that would not or could not be duplicated.

The breadth of purpose and the distinctive methods of the TVA—these constitute the most important part of the enterprise. It is these that will have the greatest usefulness to other Americans and to the increasingly large number of responsible men in other nations who are concerned with problems essentially similar to those that faced this valley ten years ago.

It is upon such purposes and methods that our answers to issues of peace and freedom will turn. All else —"principles" of economics and finance, dollars and pounds sterling, tariffs and taxation, unemployment insurance, health programs, new gadgets and plastics and chemicals and electronic devices, democratic government, even essential international arrangements—will depend upon the decisions we make and the course we follow tomorrow in the fundamental activity of developing the resources in the soil, the air, the water, and within the earth, through modern skills of science and organization.

Men and nature must work hand in hand. The throwing out of balance of the resources of nature throws out of balance also the lives of men. . . .

We think of our land and water and human resources not as static and sterile possessions but as life-giving assets to be directed by wise provision for future days. We seek to use our natural resources not as a thing apart but as something that is interwoven with industry, labor, finance, taxation, agriculture, homes, recreation, good citizenship. The results of this interweaving will have a greater influence on the future American standard of living than all the rest of our economics put together.

FRANKLIN D. ROOSEVELT

Co-ordinated Control of Water Resources

Administrative Problems Created by Federal Participation in Watershed Development

By C. Herman Pritchett*

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The present concern of the federal government with watershed development is the result of a long evolutionary process. Improvement of navigation on the inland waterways was a subject of consideration by the first Congress. Flood control was first recognized as a federal obligation when Congress set up the Mississippi River Commission in 1879. Irrigation was originally a local and state matter, but the inability of state irrigation districts to handle the more difficult undertakings led to the passing of the federal Reclamation Act in 1902. Following the first World War, the government went into the business of inland waterway transportation on the Mississippi and its tributaries through the Inland Waterways Corporation. In 1931 the Supreme Court decision in the Boulder Dam case confirmed the constitutional right of the federal government to generate power at dams constructed for navigation, irrigation, and flood control purposes. All these varied and far-flung activities of the federal government in watershed development are clearly going to become even more important in the post-war period.

The question as to how the resources of the federal government may be best organized to administer these interests is nevertheless far from clear. Complicating the problem is the circumstance that the various purposes in furtherance of which the federal government has been moved to participate in watershed development are not necessarily complementary in character. They may, in fact, directly conflict, or at least appear to do so. Water that is used for irrigation is not available to increase navigable depths in the lower channels. A full reservoir is ideal for the generation of power, but is not much use in stopping a flood. Moreover, the ramifications of a water control plan are extensive. Appropriate measures must be taken to handle the water before it ever gets into the river channels, and so agricultural and forest policies and soil conservation measures are all bound up in the matter of watershed development. The federal government's problem is further complicated because it must work out its river development program with due regard to the rights and interests of the various states involved. The problem of co-ordination that results from the necessity of reconciling and making appropriate provision for all these interests and functions is one of large proportions.

Patterns of Federal Control

The federal government has followed two fundamentally different patterns in organizing for watershed development. The first one, which is much the older of the two, is to make various single-function agencies responsible for handling the separate aspects of the development job, such as navigation, flood control, or power. Under this arrangement a number of federal agencies will operate in the same watershed, each charged with its own separate program and each operating without any necessary relationship to the other federal agencies in the same basin. The most important organizations of this type in the federal establishment include the Army Engineers, the Reclamation Bureau, the Soil Conservation Service, the Forest Service, the Mississippi River Commission, and the Bonneville Power Administration. The second pattern is that of a multiple-purpose agency with jurisdiction over a single watershed, within which it has broad powers to plan and operate a comprehensive and unified program of basin development. The Tennessee Valley Authority is, so far, the sole representative of this plan of organization. Under either of these plans there are serious problems of co-ordination of the various purposes involved. With numerous single-function agencies operating in a watershed, it is extremely difficult to get any unified approach to the development of the region. Projects tend to be haphazard, often dictated by local pressures and adopted without realization or consideration of what their effect will be on other sections of the area. Dams, levees, irrigation works, channel improvements may be built which do not add up to any effective plan of stream control. The separate agencies involved are likely to develop a jealous sense of proprietorship in their own programs that makes it impossible for them to work together for valley-wide improvement.

The Missouri Valley

The recent experience of the Missouri Valley has demonstrated on a large scale the dangers inherent in this pattern of development by separate agencies. In the upper reaches of the Missouri, the river development problem, which is there largely an irrigation matter, is handled by the Bureau of Reclamation in the Department of the Interior. In the lower river it is flood control and navigation which demand attention, and there the Corps of Engineers is the responsible federal instrumentality. The battle between these two federal agencies for the water of the Missouri has been long and bitter. Each organization has its sponsors in Congress, and each section seeks legislation safeguarding the particular water use in which it is interested. While this tug of war has continued, the Missouri has flowed on uncontrolled, floods alternating with drouths, handicapping the development of a valley in which it should

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be a vital constructive force, dividing a basin to which it should be giving unity.

Methods of Co-ordination

Naturally, federal administrative experience is not devoid of answers to the question as to how co-ordination can be secured in such a situation. The easiest solution (if it works), and the one requiring least change in administrative machinery, is simply to get the warring agencies to kiss, make up, and resolve henceforth to work together. This is, in fact, what has happened in the Missouri Valley within the past few months. The Reclamation Bureau and the Corps of Engineers, previously at loggerheads over a plan for the development of the river, suddenly effected a reconciliation and announced joint acceptance of a combined program. Of course, it needs to be mentioned that this happy event took place only after a considerable agitation had gotten under way for the displacement of both agencies by a Missouri Valley Authority. Under the circumstances some doubting Thomases have suggested that the joint plan was nothing but a shotgun wedding, and questions have been raised as to why the Reclamation Bureau was suddenly willing to accept as a part of the combined scheme an Army Engineers' dam which a few months earlier it had denounced as unnecessary. But even assuming that the conversion experience of each of the participants has been a real one, the question remains as to how long the new-found will to co-operate can endure. Can legislation bind the settlement and lay down principles as to water use so that the competition of reclamation and navigation will never again ruffle the waters of the Missouri? Time will tell, but one may be inclined to harbor reservations about the effectiveness of voluntary co-operation between potential rivals as a reliable and long-term device for co-ordinated watershed development.

Co-ordination in Specific Watersheds

There are other methods for seeking to co-ordinate such single-purpose agencies. One simple method is by voluntary transfer of functions between agencies to achieve a more logical distribution. The Army Engineers, for example, were given the job of building the Fort Peck Dam on the Missouri River. A considerable quantity of power was generated at this dam, and the Engineers, rather than undertake a program of power distribution themselves, turned the power over to the Reclamation Bureau, which has had considerable experience in disposing of power incidentally generated at reclamation dams. On the Columbia River, the power problem was considerably more complicated, with the Army controlling Bonneville Dam and the Reclamation Bureau having jurisdiction over the giant Grand Coulee. Clearly no sane government could permit these two agencies to market the power from their dams on a competitive basis. The solution chosen by Congress was to set up a third agency, the Bonneville Power Administration, which was responsible for handling the power from both dams.

Co-ordination may also be sought by placing above the several agencies dealing with watershed development in any particular basin an organizational unit specifically charged with co-ordinating the work of these operating bodies. In the course of recent Congressional action on the omnibus flood control bill, several efforts were made to take the wind out of the sails of the proposed Missouri Valley Authority by arranging for some such overall co-ordinating device in the Missouri Valley. A Missouri Valley Commission was proposed for this purpose in the Senate, and when that was defeated, an advisory board in the War Department was suggested by Senator Clark, also unsuccessfully. The effectiveness of either of these devices would have been very doubtful. The obvious difficulties in securing an integrated approach to watershed development through any of these methods have led many people to conclude that the only way to achieve unified treatment of the problem is by the establishment of a multiple-purpose development authority for each watershed on the TVA model. There is a dramatic simplicity about such a solution. It concentrates responsibility clearly upon a single agency, an agency which by reason of its autonomous status, its freedom from control by a department head in Washington, and its location immediately in the area concerned, is in an especially good position to accept such responsibility. The valley authority can, so far as its statute permits, take into account all the natural resources of the area and work out a plan into which they all fit. If there are conflicting claims for water use, they are adjusted within the confines of a single agency which has a responsibility to the valley as a whole, and do not become a bone of contention over which separate administrative agencies quarrel.

Problems of Integration Are Complex

But let no one suppose that the problem of co-ordination completely disappears with the creation of valley-wide authorities. It simply turns up in new places. One major problem is the relationship of the authority to the regular federal single-purpose agencies interested in watershed development. These agencies could, of course, simply be excluded from each area in which a watershed authority was operating, their functions being taken over by the authority. Such a radical change in established patterns would be most unlikely, however, and it would in fact practically convert the watershed authority into a regional government. No such transfer of functions took place when the TVA was set up. It is true that the dam-building function was taken over by the TVA from the Corps of Engineers, but they remained to operate the locks in TVA dams. The Department of Agriculture was not excluded by the TVA agricultural development program. Instead, the TVA entered into agreements with the department and co-operated with its local manifestations, the state agricultural colleges and extension services and the county agents. The TVA did not set up its own mapping service, but arranged to have the work it needed done by the U. S. Geological Survey. All down the line its policy was to co-operate with existing federal agencies.

The TVA experience indicates that this particular co-ordination problem can be solved in other watersheds as well, provided there is the good will and the insistence upon a solution which prevailed in the case of the TVA. But it is well to realize that the conditions in other valleys may not be as favorable from this point of view

as they were in the Tennessee Valley. In the Missouri Valley, for example, the two agencies most concerned would be the Reclamation Bureau and the Army Engineers, both long established in the area, with numerous structures and projects in operation, and a comprehensive program for the future well advanced in the planning stage, and much of it now authorized by Congress. How would an MVA fit these two agencies into its work? Would it be advisable, or politically feasible, for the MVA to take over dam building from the Engineers, as the TVA did? Could it capture reclamation from the powerfully-entrenched Reclamation Bureau, a problem which the TVA never had to face? Nor were there the extensive public lands already administered by other federal agencies in the Tennessee Valley that are found in the Missouri Valley. There was not the problem of large-scale Indian reservations and rights, grazing in the public domain, or petroleum rights. Suppose it were decided, for reasons of expediency and in order to preserve the special competence these agencies have built up, that they should continue their present responsibilities but operate under the directives of the MVA in accordance with the over-all plan which it would develop (for which Congressional approval would, of course, be required). This solution, in many respects an attractive one, would not be without its problems, however. Under these circumstances MVA would be principally a planning organization, with actual operating responsibilities limited for the most part to the field of power distribution. Acting largely through others, would the MVA carry the necessary weight, would its program hit the Missouri Valley with the impact that was felt in the Tennessee Valley from the TVA program? And would these old, established agencies accept without a fight planning decisions of the MVA which might conflict with their own notions of river development? If there were difficulty of this sort, the agencies would undoubtedly be loyally supported by their department heads and the dispute could be settled only by the President, who might be expected to give greater ear to members of his cabinet than to the heads of a regional agency with no direct Washington connection.

The advisability of having such conflicts as these adjusted at an administrative level lower than that of the President's office has caused the suggestion to be made that the proposed MVA be made responsible to a department head, presumably to the Secretary of the Interior. Admittedly this solves the problem of co-ordination, but at the cost of sacrificing the principle of decentralization and regional autonomy which has been one of the most novel and vitalizing parts of the TVA concept. But can this principle be maintained when in actual operation it means either that the President, already the most impossibly overburdened executive in the world, must add to his chores that of supervising and co-ordinating the affairs of still another agency, or else that he exercises this responsibility only in theory, leaving the valley authority in fact with only the most spasmodic direction or control from the executive branch?

All these problems of meshing organizations set up on the TVA principle into the existing federal machinery assume a terrifying degree of complexity when the discussions take the form of the "seven TVAs" which President Roosevelt has recently suggested, in line with a proposal he first made in 1937. Not only would the working-out of relationships between a multiple-purpose authority and single-purpose bureaus and agencies have to be faced in every major watershed in the country, but there would be the new problem of co-ordination among the authorities themselves. Mr. Lilienthal, in his recent book, has denied that this is a real problem. He contends that general policies for all the authorities will be laid down by Congress, which the authorities will administer under the general supervision of the President, and that within those limits there will simply be room for a little wholesome administrative flexibility. On the other hand, Secretary Ickes foresees in such a situation "confusion and overlapping and headlong adventures in every direction without any central guidance or policy enforced upon all."

A Need for Inventive Effort

Without accepting fully the Ickes position, the writer feels that Lilienthal's easy optimism on this point is unjustified. There is an administrative problem here which will demand real inventive efforts if the seven TVA plan is to merit serious consideration. Should it be solved by making the seven TVAs head up in a cabinet officer? If so, would the Secretary of the Interior be the obvious choice, as most people have assumed (including Mr. Ickes), or would the head of a department which is not so directly concerned with operating programs in the watershed development field, such as the Federal Works Agency, be in a better position to act as co-ordinator? What are the possibilities of a more complicated plan of co-ordination, which would give to various federal agencies co-ordinating responsibilities for one particular function in each watershed (for example, giving the Federal Power Commission some responsibility for power rates and accounting in each authority, requiring the agricultural program of each agency to be cleared with the Department of Agriculture, and so on)? Or is the most hopeful step a further reorganization of the President's office, and its equipment with a staff which would make it possible for the office to accept such a responsibility as would come with the addition of six more TVAs in direct relationship to the President?

It is clear that we have by the tail here a most difficult problem in administrative organization. The present unco-ordinated efforts toward watershed development have failed, as thus far demonstrated on a large scale in the Missouri Valley. The failure is highlighted by the dramatic successes of the TVA, employing a new principle of organization. But the temptation to urge the copying of this device in all other watersheds is tempered by a recognition of differing circumstances and of the possible havoc which might be wrought unless a sound plan of co-ordination and control is worked out for these new authorities.

These are the problems which will test legislative statesmanship when the Seventy-ninth Congress comes, as it surely will, to consider the Missouri Valley Authority proposal.

Pollution Control—A Post-war Public Works Opportunity for the States

By Kenneth A. Reid

Executive Director, Izaak Walton League of America

Everyone is making post-war plans. Congress is deluged with bills to provide employment for ex-servicemen and war-workers. Prominent in the last Congress, both from the standpoint of large expenditures and important effects on natural resources, were the omnibus river bills, H. R. 3961, which did not pass, and H. R. 4485, which did pass, for so-called "public water conservation." Additionally, the Bureau of Reclamation has submitted plans for irrigating six million acres of desert land in the West at a cost of $3 billion. Tremendous structures for hydro-power, irrigation, navigation, or flood control—ingeniously called "multiple-purpose" dams—cover a multitude of projects sound and unsound, some of which seem to be inspired more by the imagination of engineers and the avarice of promoters than by careful consideration of public needs.

While not rendering blanket objection to all projects in these bills, the Izaak Walton League contends that they represent hasty legislation in which existing natural values of water and the public's right to its use and enjoyment have been given at most only scant consideration as an afterthought, and that to both Congress and the public they represent a "pig-in-a-poke" because proper information has not been given the public in advance. That they are highly controversial is attested by the radical differences in views between two of the sponsoring agencies—the Army Engineers and the Bureau of Reclamation—and the obvious conflict between navigation and irrigation interests in the Missouri River proposals. We contend that before such omnibus bills are approved, these pertinent questions should be answered with full information to the public:

1. Are the individual projects needed?
2. Are they economically justified?
3. Have true public values been given due consideration, or have they been subordinated to the demands of the special interest pressure groups?
4. Will the anticipated new values exceed the original values they displace?

We contend these questions have not and cannot be answered satisfactorily without having surveys by biologists and other scientists on a par with the engineering surveys, with the findings of these surveys made public in advance of authorization.

It is fair to say that after forty-two years of dam-building by the Bureau of Reclamation, and a longer period by the Army Engineers and privately owned public utilities, the more desirable sites are already developed, and the government is now attempting to develop projects that no private capital would touch, for the very good reason that they are economically unsound. But irrespective of economic aspects, we should like to ask the promoters of these great dam projects two pertinent questions:

1. When America with her present acreage of farm land has supplied all domestic needs, all the needs of our Army, and sent unknown quantities in Lend-Lease to foreign nations, what would we do with the farm products from six million additional acres after the war is over, when European nations would be back on the soil producing their own crops?
2. When the potential generating capacity of existing dams on the Columbia River, such as Bonneville and Grand Coulee, is not presently fully utilized with all of the abnormal war demands, what would we do with the power from a hundred more dams proposed by the Army Engineers for the Columbia River system, and an uncounted number on other rivers of the Pacific coast and the Rocky Mountain region?

While Congress was spending weeks and months considering these river omnibus bills, what did it do about the very real problem of water pollution that has been a national disgrace these many years, and has been getting worse year by year, especially during the war period? The answer is—exactly nothing. Yet the press of the country has been full of complaints about the dire and worsening condition of such rivers as the Ohio, the Delaware, and the Schuylkill, on which millions of people are dependent for their water supply and, to quote from a release of the Federal Security Agency, dated August 10, 1944:

> Deficiencies in water supply, sewage disposal, and other sanitary facilities in many urban and rural areas throughout the United States now menace the health of millions and cause huge economic losses each year. . . .
>
> New sanitation facilities which would cost an estimated total of three and a half billion dollars—but which would largely pay for themselves in savings of health and economic loss—are needed as quickly as supplies of labor and materials and other practical considerations, permit their construction.

The Polluted Orphan

In the entire natural resource family, water is undoubtedly the orphan stepchild, and of all its various abuses and misuses, the selfish and inconsiderate use of the nation's waterways as convenient depositories for all undesirable wastes from both industries and municipalities is the worst and the most widespread.

Pollution of streams and lakes has been a gradual and insidious process, from an unappreciable beginning to a present crisis of first magnitude which is not merely a menace to public health, but which strikes at the very foundations of our entire economic and social structure. It was no problem in colonial times; what little existed was quickly assimilated by the large volume of clean water in the streams. When one or two small industries turned their wastes into a river there may have been no appreciable ill effects, but when fifty or a hundred larger ones added their pollution to this same stream, nature's ability to assimilate and neutralize this greatly increased load was severely overtaxed, and the river became a vile, dead thing—a liability and a scourge to the people living in the watershed, instead of a natural feature of beauty and usefulness.

Under our present social and economic system—which, as regards our treatment of water, amounts to no system at all—water pollution is in direct ratio to the density of population. Where we still find an unpolluted stream, almost invariably it is due to the comparative scarcity of man in its watershed, rather than any orderly plan of his. It is a sad commentary on our vaunted civilization that water pollution seems to be an integral part of it. Even if there were no increase in our population, the accumulative effects of pollution create a problem which will become increasingly acute with the years until it becomes literally necessary for Americans either to conquer pollution or be conquered and destroyed by it.

Theory of Pollution

The genesis and the continual growth of pollution result from man's lack of appreciation of the interrelatedness of nature and, regrettably, often from selfish shortsightedness. Streams have been used by both municipalities and industry as an easy and convenient means for getting rid of wastes, without any thought for the biological values destroyed or for the dire effects of this pollution on downstream communities. In this process of "passing the buck," the Golden Rule has long been buried beneath the bosom of polluted waters.

The whole theory and practice of pollution is one evasion of responsibility. It involves also a flagrant disregard for the rights of others and is in every sense an improper and unsocial practice. If a man dumped his garbage on his neighbor's property, this neighbor would have unquestioned recourse under law, backed by unanimous public sentiment, but when he dumps his wastes into a running stream and lets the water deposit them on his neighbor's property the matter is frequently viewed in an entirely different light.

Attacking the Problem

The bulk of the work done on water pollution to date has been in refining the treatment processes of water supply plants so the ultimate product delivered to the consumer through the faucet will be a bacteriologically safe fluid. It is a wonderful tribute to our waterworks engineers and chemists that they have been able to refine their treatment processes, as the source of supply becomes more and more polluted, so that human beings can consume the ultimate product and live to tell the tale. But the breaking point has been reached in numerous important cities—Philadelphia, Pittsburgh, Cincinnati, and Louisville, to mention only a few—and there is a limit to which science can go in making drinking water out of raw sewage and industrial wastes. We have been treating pollution at the wrong end—at the intake of our water supply plants rather than at the outfall of the sewers. We need to reverse that process.

The Izaak Walton League of America, at its twentieth annual conference on March 28, 1942, in a resolution on post-war public works, said "that the criterion for approval [should] be broad public benefits on the long-time basis, rather than mere temporary financial advantage to a particular locality; and the restoration of natural resources impaired or destroyed by mistakes of the past rather than a new construction program which may further damage our important natural resource base." Under this principle, the first recommendation was "that state, federal and municipal sewage treatment plants, wherever needed, be a condition of eligibility for other public works construction."

Water pollution is a national problem that has defied the efforts of state and local enforcement agencies these many years. Congress has wrestled with the problem for eight years without specific accomplishment. *What more logical public works programs could be found for the benefit of all of the people of the United States than a frontal attack on water pollution as the number one post-war public works project?*

We contend it would qualify in every respect:

1. The need is obvious and the application widespread.
2. While offending municipalities were putting in sewage treatment plants, with state or federal aid, others which had previously done so could select other public works.
3. *It would provide employment where employment will be most needed because the degree of water pollution is in close ratio to the density of population.*

State Versus Federal Philosophies

During past years when Congress has considered proposals for federal control of pollution, an important factor in the opposition which prevented passage, aside from the ever present opposition of industrial polluters to any positive control of pollution, was the opposition of state agencies authorized by state law to deal with water pollution. In spite of the fact that all of the other uses or abuses of water—navigation, flood control, hydro-power, and irrigation—are legally under federal control, most state governments have contended that water pollution is purely a state matter and not within the province of the federal government to control. Yet when state legislation to control pollution is at issue, the industries of that state invariably counter with the argument, "To pass such legislation in this state would penalize the industry of the state, put it at a competitive disadvantage with the industries of other states, and eventually drive it out of the state, creating a large unemployment problem." The argument is rather plausible, and it has certainly been effective, both against enact-

ment of adequate state legislation and, where such legislation is on the books, against its enforcement.

If the above argument is valid, it logically follows that control of pollution should be uniform and nationwide, thereby putting all industries on a common basis and causing the argument of competitive disadvantage to evaporate into thin air. But unfortunately it is a matter of record that industrial representatives who made the plea of competitive disadvantage against state legislation appeared before committees of Congress and said that control of pollution was properly a state or local matter and had no place in the federal picture!

Interstate Compacts

As a compromise to avoid federal control on interstate streams, where obviously state authority is lacking, the interstate compact has been widely heralded as the solution. Presently there is much agitation for complete ratification of the Ohio Valley Interstate Compact as the solution for the serious pollution of that river.

Six years ago we studied this compact carefully. It read like a beautiful declaration of war on pollution up to a certain point, where someone applied the whitewash which nullified the whole thing. The weaknesses of this compact are clearly portrayed by the analysis we wrote in January, 1939, from which we quote in part:

> In theory compacts sound fine; in practice they just don't materialize, but as a legal means of putting off the day of reckoning in pollution control, the inter-state compact probably has no equal.
>
> The negotiations amongst the states of the Ohio Valley looking toward an interstate compact for control of pollution were begun in 1924. On October 11, 1938, the State Compact Commissions reached an agreement on the form of compact; this is now ready for the ordeal of surviving the scrutiny of the different State Legislatures. If the instrument is finally ratified by each of these separate State Legislatures, it is then ready for ratification by Congress. You and I may have long white whiskers and be drinking water imported from Canada by the time that happens.

The prophetic accuracy of that statement is attested by the fact that today, six years later, two of the headwater states have still not ratified the compact, while others have attached conditions to their ratifications.

But assuming that the compact may eventually be ratified, let's see what it would do. After the beautiful declaration of war against pollution we find in the compact the following language:

> No such order shall go into effect unless and until it receives the assent of at least a majority of the commissioners from each of not less than a majority of the signatory States; and *no such order* upon a municipality, corporation, person or entity in any State *shall go into effect unless and until it receives the assent of not less than a majority of the commissioners from such state.*

Quoting again from our analysis of six years ago:

> Fourteen years of negotiation for an interstate compact that agrees to enforce no control over pollution from either municipalities or industries in any State unless two of the three compact commissioners from the offending State are willing to have this order entered against its pollution. If the State is willing, it can clean up its own pollution without an interstate compact; if it is unwilling, such a compact will contribute nothing to the cause of clean streams.

There, gentlemen of our state governments, is the record—and the problem of pollution still remains to be solved.

The Remedy

Throughout the years the Izaak Walton League, through its state divisions, has actually worked for better state legislation to control pollution. The results generally have been quite disappointing for reasons treated earlier in this article. In fairness, I want to pay tribute to my native state of Pennsylvania which recently, after a lapse of a number of years, began to take vigorous action against polluters under the authority contained in the Clean Streams Act of 1937. May the good work continue and may other states follow this example.

The Izaak Walton League favors national legislation to control pollution on a uniform basis throughout the nation, with a distinct provision that the state governments and any interstate compact that may be formed will be given full opportunity to take the needed action for correction of pollution before the federal authority is invoked. We believe such legislation would be a powerful aid to the states that want to do the job, and we believe it is essential to bring the recalcitrants into line—and there will always be recalcitrants in everything of this nature.

The problem of water pollution is a vital and immediate problem which is ideally suited for post-war work; it should be a challenge to the states to prove that state governments can and will function in this field. The problem is squarely in the lap of the states. If they tackle it immediately and aggressively there will be no need of federal control. If they fail, that failure will invite federal control.

The problem is plain, the need for its correction obvious and great; correction would make ideal post-war work projects from every angle. It merits top priority, and crowning that priority should be treatment plants for the state hospitals and other state institutions now discharging raw sewage into public waters, for obviously a state cannot in good conscience oblige its municipalities to clean up their pollution until the state itself has clean hands.

Will the states do the job—or, by failing to do so, will they invite the federal government to take over? *Let's cleanse our rivers before we dam them!*

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U. S. WAR BONDS

Developing Water Resources in the Columbia River Basin

By George F. Yantis

Member, House of Representatives, State of Washington

Probably because of the interest in the huge Grand Coulee project, reference to the Columbia River Basin most often brings to mind the broad and relatively low plains of south central Washington and north central Oregon. However, the importance of the river in the economy of the Northwest and the extent and variety of problems it brings can only be measured by including the entire series of rivers tributary to the Columbia. On the north, the Okanogan, together with the Columbia, extends far into Canada; the Clark's Fork, on the east, reaches into Montana and into Wyoming, both passing through Idaho; the Umatilla, John Day, Des Chutes, and Willamette enter the main river from Oregon, on the south. The Snake, coming in from the east, is itself a large river system with many tributaries. The Yakima and Wenatchee enter from the west and are strictly Washington rivers.

The possibilities of the various rivers in the Columbia system is disclosed by the following list of projects, some completed, others yet only on paper: On the Columbia are projected or in existence eleven dams; on the Snake, four; on Clark's Fork, three; and on the Willamette, seven. Some projects are to provide for irrigation only, others for power, and several will produce both.

The Columbia Country

The extent to which the development of the country east of the Cascade Mountains depends on the rivers is only dimly realized by those who live in areas where water is a thing to be gotten rid of rather than a treasure to be gained with great cost and husbanded with jealous care. It is sufficient here to say that the controlling factor in agricultural development throughout much of Idaho and Montana, and in Oregon and Washington east of the Cascade Mountains, is the availability of river water. Without irrigation, many cities and farm areas in the West would not be in existence.

A writer has said that the newcomer's first impressions of the Pacific Northwest are of "breath taking beauty and loneliness." Washington Irving, writing more than a century ago on information gathered from the Astor expedition to the Oregon coast, wrote off the region west of the Cascades as a place of constant rains, with the only fertile lands narrow strips along the rivers. These strips he considered would be the only part of the country to be settled.

Early migrants into the country, overland, wrote of the often losing battle with hunger and thirst through mountain passes and over dry and desolate plains.

The "breath taking beauty" of the Pacific Northwest is very real—so, also, the loneliness; for, except in the coastal area and in a few favored spots, the population is relatively thin. It could not be otherwise under natural conditions. West of the Cascade Mountains the population is much denser. There is substantial rainfall but hardly the extent that Irving seemed to believe. In fact, some irrigation is desirable in many places. The uplands west of the mountains are principally suitable for growth of timber, but there is also much good agricultural land, both in the Puget Sound area of Washington and in the Willamette Basin of Oregon.

The valleys of the tributaries east of the Cascade Mountains, as distinguished from the basin of the Columbia itself in eastern Washington, are generally relatively high and narrow. Agriculture is almost entirely dependent on irrigation from the water of the rivers. There is some dry-land farming, including wheat production and stock-raising.

This discussion will concern itself principally with the large area of land suitable for agricultural development in the broad Columbia plateau lying in south central Washington. It is proper to include the foregoing general description of the characteristics of the country included in the system of the Columbia and its tributaries, since no planning of the Washington plateau would be adequate which did not take cognizance of the other parts of the system.

Balanced Use of River Resources

The river has many benefits to bestow. Principal among them are transportation; power; water for irrigation, industrial, and domestic use; food and game fish; recreational opportunities; and scenic grandeur. Not all of these are gifts free to be had for the taking. Imagination, research and engineering skill, sound planning on a broad scale, and huge capital investment are required if the river, its tributaries, and their valleys are to furnish the good things they have in store. There are engineering problems, economic problems, legal problems; there are local developments, interstate developments, and international developments in the construction required and the effects produced, and therefore in the problems presented.

On the engineering side, there is, of course, the construction of suitable works to accomplish given results, but also a balancing of values as between areas. A particular locality may be principally interested in water available for irrigation. The costs of the necessary development might be too great to be borne on irrigation alone, but within reason if shared with power development. There are approximately twenty-nine dam sites available on the river and its tributaries. Most of these will produce relatively large volumes of electric energy.

Many would make water available for irrigation projects. The timing of development of projects must be related to presently available or reasonably to be anticipated demands either for electric energy or irrigated lands, or both. Construction of a given project may delay indefinitely the construction of another.

It is not desirable that the huge salmon runs on the Columbia be destroyed or to any considerable extent reduced by the construction of dams. What provisions can be made to preserve the salmon? There are problems of allocation of costs, the comparative benefits of a particular development, and the public interests as affected by the order and extent of development. Of course, the location of industry, the development of transportation, policies as to sale of electric energy, the protection of scenic values and recreational facilities, and protection of the waters of the rivers from pollution are interrelated matters.

The nature, extent, and timing of construction and development must have regard to the economic conditions in the country as a whole. The market for products of the land, the kind of crops to be produced, the possible outlets for electric energy are very real factors in the future value of completed projects. These are more largely controlled by the national than by the local economy.

The Grand Coulee project will provide water for the irrigation of approximately a million and a quarter acres of good land. The area is so located with reference to cheap electric energy produced by the hydroelectric developments on the Columbia as to offer opportunities for industrial development. How rapidly should the water be made available to the land? What planning is being done to expedite and control the development which these possibilities hold out? When did planning begin? How far has it gone? Who is doing the planning?

Planning in the Columbia Basin

The project of Columbia River development was first investigated by the Bureau of Reclamation in 1903. Interested individuals and organizations in the state of Washington carried on agitation for investigation and development work continuously for a long period of years thereafter. The Columbia Basin Commission of the state of Washington caused a substantial survey to be made in 1919 and 1920. Thereafter, surveys were made by engineers for the Bureau of Reclamation, the state of Washington, the Federal Power Commission, and the Corps of Engineers, U. S. Army.

In 1927, Congress ordered a survey of the Columbia to be made by the Corps of Engineers, U. S. Army, with a view to power development, flood control, and irrigation. It may be said that developments on the river and its tributaries since that time stem pretty much from the report made by the army engineers. In 1932, the Chief of Engineers, War Department, recommended to the Secretary of War a comprehensive plan for the development of the Columbia River, to consist of ten dams, including power plants at various locations on the river, including the Grand Coulee. The work planned would make the river navigable for a great distance and would develop annually forty-two billion kilowatt hours of electric energy, which would amount to approximately one-third of the total electric power produced in the United States in 1930. The plan recommended the construction of a high dam at Grand Coulee as the main storage, power, and reclamation works on the river. This report was substantially concurred in by the report of the Chief Engineer, Bureau of Reclamation.

In July, 1933, the sum of $63 million was set aside by the Federal Emergency Administration of Public Works for Grand Coulee development. In the interval between March, 1932, and the allocation, a great deal of work had been done by state and federal agencies in engineering and other research relating to river development.

It is interesting to people familiar with the Coulee and Bonneville projects to recall that in 1932 and 1933 the Coulee project was generally talked of as something to be accomplished within twenty-five to fifty years. The Grand Coulee plant long since began delivering electric energy; the irrigation works are yet to be constructed. Although not all of the generators have yet been installed in the Grand Coulee development, the electric energy produced at these plants has been a highly important factor in the war effort.

Many agencies have contributed to the planning and to the research and analysis which must be the basis of sound planning in the process of Columbia Valley development. There has been excellent co-operation among the large number of persons, governmental units and agencies, educational institutions, and other groups who have participated in this work. Much counsel and assistance have been received from representatives of state and local granges, commercial groups, and trade associations, as well as representatives of business institutions, such as railroads.

Extent of Planning Activities

Some idea of the extent and detail of the work done in the planning field may be gathered from a study of the plan of joint investigations of the Columbia Basin irrigation project, developed early in 1941. This included an enumeration of some twenty-eight problems to be considered, the designation of leadership on the various studies, collaboration with groups in related studies, timing with respect to completion on agreed dates and for the preparation of a report of the results of the investigation with findings, recommendations, supporting factual data, evidence, and opinions. An idea of the number of people involved and the agencies represented may be gathered from the following partial enumeration (when a federal department, agency, or bureau is mentioned, it may cover a dozen subfunctions which are included with the agency listed):

Bureau of Reclamation; Bureau of Agricultural Economics; Washington State College and Experiment Station; Pacific Northwest Regional Planning Council; The Chicago, Milwaukee, St. Paul & Pacific, The Great Northern, The Northern Pacific, The Spokane, Portland & Seattle, and The Union Pacific Railroad systems; the Bonneville Administration; Washington State Planning Council; Soil Conservation Service; University of Washington; U. S. Farm Security Administration; Federal Housing Administration; U. S. Housing Authority; Farm Credit Administration; Rural Electrification Administration; Washington State Department of Health; Corps of Engineers,

U. S. Army; Washington State Department of Conservation and Development; Washington State Land Commission; various Columbia Basin irrigation districts; Federal Works Agency; Washington State Board of Education; Washington State Department of Highways; county commissioners of various Washington counties; Washington State Department of Highways; U. S. Geologic Survey; Washington State Geologist; National Park Service; Washington State Parks Committee; U. S. Forest Service; Office of Indian Affairs; Washington State Game Commission; various chambers of commerce.

Subject Matter of Planning

The studies in this joint investigation, although all related to the Columbia Basin irrigation project in south central Washington, covered (as planning should) a wide range of subjects, including crops and crop programs in similar areas; types of farm economy best suited to the particular project area; practicable and equitable means of inducing proper land use, including soil conservation districts, county zoning, etc.; studies of normal water requirements for crops and soils in various parts of the project; study of practicable means of preventing excessive use of water; optimum size of farm units for the area; seasonal labor problems; topographical considerations as to farm and facility development; protection of standards of living and assistance to settlers in providing suitable and essential improvements; economic and socially desirable community groupings; allocation of costs of primary irrigation works as between sections of the river and between navigation, flood control, and general social benefits; methods securing contribution toward cost of primary irrigation works from nonrural settlers; financial aid to settlers; methods of establishing requisite control of privately owned lands; control of state, county, and railroad lands; rate of development of lands; villages; roads and transportation facilities; navigation aspects of the river; underground waters; rural and village electrification; manufacturing; recreational resources and needs; rural community centers; governmental organization and public works planning program and financing; local government units. If the list is long and varied, it must be recalled that it relates to an area of a million and a quarter acres of land.

Possibilities for Industrial Development

The possibilities of an improved pattern of development for the region, if planning be sound and really gets into the blood stream, becomes apparent when one realizes that settlement of the region is yet to be accomplished. The land is still almost all in the sagebrush stage. Theoretically, it is possible to plan the whole development according to the heart's desire. Actually, the ideal can be realized only partially, but it is possible to do a better or a worse job in the development, and the opportunity really to build purposefully, unhampered by a pre-existing pattern and interests, is too tempting and valuable to miss.

A most important planning program is being carried on by the Bonneville Power Administration. A tremendous amount of electric energy produced by the Coulee and Bonneville plants is at present being fully used owing to the huge power demand by war industries. This, however, is not a permanent market and it is natural that the Bonneville administration should seek for new developments to provide a market for the energy which will be available when the war demand falls off.

Studies by the Bonneville Administration

Studies by the administration include an analysis of the present situation in the northwest area, for example, in industry; the factors affecting development in that field; desirable future developments; and research needed to strengthen the regional situation.

Special studies have been made as to forest industries; chemical industries of various sorts, including plastics, fertilizers, etc., light metals, ferrous and nonferrous metals.

An expanded market for electric energy in the region will depend upon growth in population and in the activities by which people live. The administration's appraisal of the region's present economy indicates certain directions for further development. They include diversification in industrial processes and production; the integration of basic plants and industries; secondary manufacturing activities; wider utilization of regional raw materials—agricultural, forest, and mineral.

It is apparent that agriculture has not yet reached its optimum level. The processing of agricultural products is still in rudimentary stages. Conservation of soils calls for greatly increased use of commercial fertilizers, the production of which is a "natural" for the Pacific Northwest, with its huge electric energy resources and deposits of phosphate rock.

There is like opportunity for great improvement in the forest industries. This would include a much more complete use of the trees and a great diversification of products. There is a great field for the use of electric energy in air conditioning and heating, as well as expansion of the more usual domestic and commercial uses for power. There is also opportunity for greatly expanded use of electric energy in transportation.

The particular kinds of industry in which the Pacific Northwest can hope to compete successfully are of the sort calling for research, experimentation, and the application of scientific knowledge. The studies of the Bonneville administration seek to indicate the fields offering possibilities, the resources which are available, and the markets in which the region might compete successfully. The administration is giving much consideration to these matters. Also, the governors of the four northwest states are, collectively and individually, stimulating both interest and planning for the region as a whole, as well as for the separate states. In fact, the people of the far western states are becoming increasingly aware of their place in the economy of the country. They have long been suppliers of raw materials and purchasers of manufactured goods. They face, they believe, freight rates designed to favor eastern industry—certainly an established pattern of trade and manufacture related to the East. They are far from heavily populated consuming centers, and on the West is—water. Raw material supplies become depleted. A better balance, the Westerner begins to realize, must be arrived at, if the future of the region is to be protected. The Westerner is becoming "resources conscious" and somewhat "plan-minded."

EDITORIAL COMMENT

Rivers Are All Alike in This One Respect

WHILE A dozen states are wrangling over the method of taming the wayward Missouri and putting every drop of its wasted waters to useful instead of destructive energy, Indiana is undertaking a full scale job of water conservation on the principle adopted in the Missouri Valley Authority bill, now pending before Congress. It is easier to perceive the necessity for a general plan and a single administrative unit within one state than it is when the drainage area covers a dozen of differing needs and topography.

And Indiana has the object lesson in the Wabash, a Hoosier's pride and joy, and sometimes annoyance. From its source in Northwestern Ohio to the Southern Illinois boundary, the Wabash and its tributaries drain 70 per cent of Indiana. Prairie banks are low, the Wabash drops several hundred feet throughout its meandering course.

The new Flood Control Commission has just finished a conference with army engineers at which an agreement was reached for post-war protective works; but *The Indianapolis Star* remarks, "a program must be launched which will go beyond any work recommended by the army." Indiana's water table, like ours, is precariously low and falling. There is terracing to be done, farm ponds must be built, land drained, erosion stopped, forests planted and strip mining deserts reclaimed. *The Star* declared unity is demanded and concludes that "only a central group with authority to work out a comprehensive pattern for the entire basin will get the job done right."

Truer words were never spoken, and they would be just as true if the Wabash crossed a dozen states.

Louisville (Kentucky) Courier-Journal

Two Hundred Years Ago

WHEN THE WELL supplying the suburb of Oak Lawn with water went dry, just before the Christmas holidays, it emphasized a problem to which attention has been called at various times in these columns. That problem is the lowering of the water table throughout the Middle West.

A few days after Oak Lawn had arranged for emergency water supply from Chicago, a dispatch from Waukesha, Wis., revealed that the famous Waukesha spring water was in danger of exhaustion. Throughout central Illinois farmers' wells are running dry.

Diminution of the Middle West's underground water supply is the end result of centuries of cumulative forces. Restoration of the water level to normal can be accomplished, if at all, only by long-range programs of reforestation on watersheds hundreds of miles away, and restoration of swamps, ponds and lakes that were drained decades ago. The artesian water that flows to the surface from deep wells in central Illinois is water that fell as rain in northern Wisconsin a couple of centuries ago.

What this subtle desiccation of the fertile midlands may mean if it continues unchecked is anybody's guess. But vast areas of this globe that are now desert wasteland . . . were once covered with grass and forests.

First catastrophic results in the Middle West might be the loss to certain localities of key industries. An extensive beverage industry has grown up in Waukesha because of the abundance of excellent water. Peoria's vast distilling industry is predicated on an abundance of pure water; but Peoria's deep wells, like Waukesha's, produce less water each year. Each new well that is drilled to augment the dwindling supply must be drilled to greater depth.

Chicago (Illinois) Daily News

A Sensible Report

THE NEBRASKA Legislative Council's Sub-Committee on Water Diversion recommended no new laws to the incoming legislature.

But after its long and seemingly most careful study of the subject, it made certain observations which, we believe, will appeal to the common sense of the people of Nebraska.

Among them, this one:

> Where the people of one area or of one community have acquired established rights, there can be no thought of taking away these rights without just and adequate compensation. The conflicting interests, however, of neighboring communities or areas must not be permitted to jeopardize the welfare of the entire state. *The luxury of quarreling over water rights, while the water goes to waste, has become too expensive to be borne much longer.*

Seldom has the case against dog-in-the-manger legalism been better expressed.

The sub-committee did not undertake in detail to pass upon the Bureau of Reclamation's plans for irrigation development in the Missouri Valley, but it said:

> It (the sub-committee) does believe, however, that some similar basin-wide program looking to the development of all the region's water resources and *the integration of their use for all beneficial purposes is essential* to the realization of a maximum development of irrigation in Nebraska.

The sub-committee is to be complimented for keeping its skirts scrupulously clear of the many local feuds which so long have blocked full usage of the State's water resources, and for keeping its eyes firmly fixed on its one proper objective—the long-range development of Nebraska. . . .

Evening World-Herald (Omaha)

For Water Control

WATER CONTROL for Florida apparently is moving out of the academic discussion stage to where action can be expected to remedy a condition that threatens the economic structure of the state. . . .

We have the evidence before us. Year after year, we have seen unrestrained drainage dry the rich mucklands of the Everglades into a powdery substance, to be carried off by the winds or devoured by devastating fires.

We have seen the potable water supply of our great coastal communities menaced by salt water infiltration as the fresh water table sank lower and lower each year because of unscientific drainage.

Millions of dollars of state-owned land have been forever lost as agricultural assets because of the shrinking water supply. The water, it is true, has flowed in stated quantity from the Kissimmee river basin. But it has been diverted to canals which whirled it on to the ocean and the Gulf. . . .

The results of this lack of balance between natural and uncontrolled canal drainage have been piling up cumulatively and relentlessly through the years. We cannot now shut our eyes to the evil which we have permitted.

Miami (Florida) Herald

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